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| 10/673,612 | 09/29/2003 | Steve Zhihua Zeng | 1459-VIXS063 | 2553 |
| 29331 | 7590 | 12/26/2007 | EXAMINER | |
| LARSON NEWMAN ABEL POLANSKY & WHITE, LLP | | | KIM, CHONG R | |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/673,612

Applicant(s)

ZENG, STEVE ZHIHUA

Examiner

Charles Kim

Art Unit

2624

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 October 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment and Arguments

1. Applicant's amendment filed on October 12, 2007 has been entered and made of record.
2. Applicant's arguments, see page 5, with respect to the rejection(s) of claim(s) 1 and 18 under 35 U.S.C. 102(b) as being anticipated by Mita (U.S. Patent No. 5,231,677) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made, the details of which are provided below.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-7, 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Maeda et al., U.S. Patent No. 5,606,630 (hereinafter "Maeda") and Mita et al., U.S. Patent No. 5,231,677 (hereinafter "Mita").

Referring to claims 1 and 2, Maeda discloses a method comprising receiving a first, second, and third layer of a video image and performing image processing on each of the individual layers [col. 8, ll. 3-34. Note that Maeda separates the video image signal into three layers, R, G, and B, and performs gradation processing on each of the three layers of video

image data]. Maeda does not explicitly disclose that the processing on each layer comprises determining a first edge layer based on the first layer and blending the first layer with a first other layer, wherein control of the blending is based upon the first edge layer.¹

Mita discloses processing an image which comprises the steps of determining a first edge layer based on a first image layer and blending the first image layer with a first other layer, wherein control of the blending is based upon the first edge layer [col. 4, ll. 20-col. 6, ll. 54 and figure 1].

Maeda and Mita are combinable because they are both concerned with performing image processing on image data. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify Maeda such that the image processing performed on each video layer comprises determining a first edge layer and blending the first image layer with a first other layer based on the first edge layer, as taught by Mita. The reason for doing so would have been to produce a high quality and high precision image from an input image signal [Mita, col. 2, ll. 59-65]. Therefore, it would have been obvious to combine Maeda with Mita to obtain the invention as specified in claim 1.

Referring to claim 3, Maeda further discloses providing composite of the first video layer and the second video layer for display on a display device (col. 8, ll. 35-46).

Referring to claim 4, Mita further discloses that the first other layer is a filtered representation of the first image layer (Figure 1, item c).

Referring to claim 5, Mita further discloses that the filtered representation is a smoothed representation of the first video layer (Figure 1, item c).

¹ The Examiner notes that the video image in Maeda is merely an image, i.e., a two dimensional composition of

Referring to claims 6-7, Maeda further discloses that the first video layers is one of an RGB layer or a YUV layer (col. 8, ll. 26-46).

Referring to claim 18, Maeda discloses a method comprising receiving a first, second, and third layer of a video image and performing image processing on each of the individual layers [col. 8, ll. 3-34. Note that Maeda separates the video image signal into three layers, R, G, and B, and performs gradation processing on each of the three layers of video image data]. Maeda does not explicitly disclose that the processing on each layer comprises determining an edge layer based upon an image layer; determining a filtered layer based upon the image layer; determining a blending ratio for each pixel of a blended image layer, wherein the blending ratio is to control blending the image layer and the filtered layer to form the blended image layer, and the blending ration is based on the edge layer.

Mita discloses processing an image which comprises the steps of determining an edge layer based upon an image layer (Figure 1); determining a filtered layer based upon the image layer (Figure 1); determining a blending ratio for each pixel of a blended image layer, wherein the blending ratio is to control blending the image layer and the filtered layer to form the blended image layer, and the blending ration is based on the edge layer (Figure 1, col. 6, lines 33 – 54).

Maeda and Mita are combinable because they are both concerned with performing image processing on image data. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify Maeda such that the image processing performed on each video layer comprises the steps taught by Mita. The reason for doing so would have been to produce a high quality and high precision image from an input image signal [Mita, col. 2, ll. 59-

image pixels.

65]. Therefore, it would have been obvious to combine Maeda with Mita to obtain the invention as specified in claim 18.

Referring to claim 19, Mita further discloses that the filtered layer represents a smoothed image (Figure 1, item c).²

Referring to claim 20, Maeda discloses a system for receiving a first, second, and third layer of a video image and performing image processing on each of the individual layers [col. 8, ll. 3-34. Note that Maeda separates the video image signal into three layers, R, G, and B, and performs gradation processing on each of the three layers of video image data]. Maeda's system does not include the components for performing the image processing on the video layers, as recited in claim 20. However, these components and steps were well known in the art. For example, Mita discloses a noise filter coupled to receive a source image and to provide a smoothed image (Figure 1); an edge detector coupled to receive the source image and to provide an edge layer (Figure 1); a blending controller coupled to receive the smoothed image and the edge layer and to provide a destination layer based upon the source layer and the destination layer (Figure 1, col. 6, lines 33 – 54).

Maeda and Mita are combinable because they are both concerned with performing image processing on image data. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify Maeda's system to include the teachings of Mita. The reason for doing so would have been to produce a high quality and high precision image from an input image signal [Mita, col. 2, ll. 59-65]. Therefore, it would have been obvious to combine Maeda with Mita to obtain the invention as specified in claim 20.

² Note that Mita in combination with Maeda disclose a smoothed *video* image.

4. Claims 8-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Maeda, Mita, and Koc et al., U.S. Patent No. 5,790,686 (hereinafter "Koc").

In regards to claims 8 – 16, Mita further teaches the concept of mixing an edge signal with a smoothed signal based on the edge signal. Mita does not teach of using gradient filters to determine the edge layer. However, it is well known in the art as shown by Koc (col. 20, lines 35 – 63) to use horizontal and vertical gradient filters. It is well known in the art to use either or both horizontal and vertical gradients depending on many factors ranging from processing time to the types of edges the user wants to detect.

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to use horizontal and vertical gradient filters (as taught by Koc) in the invention disclosed by Maeda and Mita. Gradient filters were well known for quickly and efficiently detecting edges. Using these filters in any combination (one or both) was well known in the art. Thus any combination could have been used to determine the blend ratio.

5. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Maeda, Mita, Koc, and Lee et al., U.S. Patent No. 6,160,913 (hereinafter "Lee").

In regards to claim 17, the combination of Maeda, Mita and Kroc does not teach a user defined threshold value. However, this concept is well known as shown by Lee (col. 4, line 54 – col. 5, line 6).

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to have a user-defined threshold value (as taught by Lee) in the invention disclosed

by Maeda, Mita and Kroc. Allowing the user to set the threshold would allow the invention to be used over a wider variety of images, thereby enhancing the flexibility of the system.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles Kim whose telephone number is 571-272-7421. The examiner can normally be reached on Mon thru Thurs 8:30am to 6pm and alternating Fri 9:30am to 6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on 571-272-7453. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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